

Building Blocks for Effective Housing Elements

Opportunities for Energy Conservation

Government Code Section 65583(a)(7) requires “an assessment of housing needs and inventory of resources and constraints relevant to the meeting of these needs. The assessment and inventory shall include the following: An analysis of opportunities for energy conservation with respect to residential development.”

Opportunities for Residential Energy Conservation

The energy conservation section of the element must inventory and analyze the opportunities to encourage the incorporation of energy saving features, energy saving materials, and energy efficient systems and design for residential development. Planning to maximize energy efficiency and the incorporation of energy conservation and green building features can contribute to reduced housing costs for homeowners and renters, in addition to promoting sustainable community design and reduced dependence on vehicles. Such planning and development standards can also significantly contribute to reducing green house gases. Updated policies and programs could address the environmental significance and operational benefits of employing energy conservation in the building and retrofit of decent, safe and affordable housing.

I. REQUISITE ANALYSIS

The element should analyze opportunities for energy conservation in residential development. Examples of areas to be evaluated include:

Planning and Land-Use

- Planning to provide an adequate supply of housing will ensure sufficient affordable housing for full range of income groups reducing long commutes in search of affordable housing.
- Planning for sufficient housing supply *in the right locations* - close to jobs, services, and amenities - reduces congestion and long commutes.
- Adopting higher densities and promoting infill and compact development patterns will promote housing affordability, maximize existing land resources, reduce pressure to convert agricultural resources, and conserve habitat and environmentally sensitive areas. According to the Urban Land Institute

publication *Growing Cooler*, “conserving or developing infill housing within a more urban core has been shown to reduce primary energy consumption an average of 20 percent per household over newer sprawl developments” (for full report, see links below).

- Data consistently shows higher density housing results in lower Vehicle Miles Traveled (VMT).
- Data consistently shows occupants of affordable housing own fewer cars and are more likely to use public transit.
- Examples of programs or policies to be incorporated into the housing element:
 - Zone for and promote infill and transit-oriented development
 - Adopt higher densities including along transit corridors
 - Promote use of photovoltaic systems
 - Promote water-efficient landscaping and energy efficient irrigation systems
 - Develop energy conservation standards for street widths and landscaping of streets and parking lots to reduce heat loss and/or provide shade
 - Orient housing developments, where possible, to take advantage of natural day lighting
 - Promote permeable paving materials for cooling and water conservation
 - Apply for or support applications for affordable housing funds from agencies that reward and incentivize good planning. Examples include the HCD’s Multifamily Housing Program (MHP) and California Tax Credit Allocation Committee resources which provide competitive advantage for affordable infill housing and affordable housing built close to jobs, transportation, and amenities
 - Promote Location Efficient Mortgage (LEM) and Energy Efficient Mortgage (EEM) programs. These programs provide homeowners with affordable mortgage assistance if they purchase a home in specified location efficient areas or by meeting certain energy conservation standards (see IV. Links).

Conservation Incentives for the Building Industry and Residents

- Promote broad public outreach, including educational programs and the marketing of energy-saving incentives.
- Apply for funds to assist residents with energy conservation retrofits and weatherization resources.
- Target local funds, including redevelopment resources and CDBG, to assist affordable housing developers incorporate energy efficient designs and features.

- Adopt policies and incentives to promote energy efficient retrofits prior to resale of homes.
- Streamline and expedite approval process for housing built using green building standards and specific energy standards.
- Partner with community services agencies to provide financial assistance for low income persons to offset the cost of weatherization and heating and cooling homes.
- Partner with public utility districts and private energy companies to promote free energy audits for low-income owners and renters, rebate programs for installing energy efficient features/appliances and public education about ideas to conserve energy.

Promoting Green Building and Energy Efficient Building Standards and Practices

- Provide incentives to build housing that exceeds Title 24 requirements.
- Promote standards that promote passive solar heating, overhangs on south facing windows, planting of deciduous trees on the west and south.
- Encourage installation of photovoltaic and “cool” roofs, solar water heating, and where appropriate wind turbines.
- Support building framing that promotes construction of tighter building envelopes with maximum height and sky exposure plans and minimum setbacks.
- Incentivize use of recycled and rapidly renewable building materials and ensure effective demolition and construction recycling.
- Require use of Energy Star appliances and materials.
- Promote installation of efficient air conditioning and use of whole house fans and solar attic fans.
- Encourage use of upgraded insulation, advanced air infiltration reduction practices (air sealing), Low-E double-pane windows.
- Promote use of energy efficient lighting including fluorescent.
- Require use of Low or no-VOC paint, wood finishes, & adhesives; avoid products with added formaldehyde.

- Promote use of mechanical ventilation system, heat recovery ventilation unit, sealed-combustion furnace and water heater.
- Require range hood and bath fans to vent to outside and bath fans to be automatically controlled with a timer or humidistat.
- Require recycling a specified percentage of construction wastes.
- Promote use of recycled content aggregate for driveways.
- Promote effective water management designs (i.e., use of water efficient landscaping, efficient irrigation systems, incorporating wastewater reuse and metering).

KEY IDEAS

II. MODEL ANALYSES

[*Sample - City of San Diego*](#)

III. LINKS

[Attorney General Brown Announces Landmark Global Warming Settlement:](#) California Attorney General's decision highlights potential issues on CEQA compliance for General Plan is under review.

General Informational Resources

[HCD: Selected Bibliography on Green Building and Sustainability Resources](#) web links for sustainable design and green building practices, affordable housing measurement & certification, rehabilitation & reconstruction, Energy Star products and ratings, demolition & recycling, energy and water conservation, green building products/directories and funding resources.

[Partnership for Advancing Technology in Housing \(PATH\)](#): HUD's PATH promotes the creation and use of technology to improve the quality, durability, environmental performance, energy efficiency, and affordability of American homes. Led by HUD, this public/private initiative combines resources from the government and the housing industries to speed innovation throughout the homebuilding industry.

[U.S. Green Building Council](#) - Non-profit organization dedicated to sustainable building design and construction and developers of the LEED building rating system. [Northern California Chapter Resources](#)
[LEED Rating System](#)

[Global Green USA](#) establishes collaborative partnerships with local governments, affordable housing organizations, and other public and private entities to facilitate the development, adoption, and implementation of sustainable policies, programs, and practices. Global Green USA also partners with housing developers and public agencies to 'green' select affordable housing projects.

[Global Green USA's Green Building Resource Center](#). Global Green USA's Green Building Resource Center provides free design advice and information about environmentally-friendly building products and strategies.

[ICLEI - Local Governments for Sustainability, USA Inc.](#): action packed examples of sustainability initiatives such as [Cities for Climate Protection](#)

[Global Footprint Network](#)

[California Infill Parcel Locator](#): site tool for pinpointing potential infill sites throughout California.

[Strategic Energy Innovations \(SEI\)](#) is a nonprofit organization that helps empower schools and universities, small businesses, local governments, affordable housing agencies, and agricultural communities to reduce pollution and save money through clean energy and resource efficiency.

[EnergyAction](#) is an independent energy management company that offers comprehensive energy buying and management services

[Bioneers](#) is a nonprofit organization that promotes practical environmental solutions and innovative social strategies for restoring the earth and communities.

Funding Links

[California Integrated Waste Management Board Green Building Program](#)

[The California Public Utilities Commission \(PUC\), California Solar Initiative Single-Family Low-Income Incentive Program](#)

[Low Income Home Energy Assistance Program \(LIHEAP\)](#) provides financial assistance to low-income persons to offset the costs of heating and/or cooling dwellings and the Energy Low-Income Weatherization Assistance Program

[Federal Environmental Protection Agency \(EPA\)](#)

[Department of Energy \(DOE\)](#)

[California Green Builder Program \(CGB\)](#) is an effective and cost-effective green building program for production builders and California homebuyers

[Eco-Home Network](#) is an on-going living research center that demonstrates ecological living in an urban environment.

Local Government Programs

[The Alameda County Waste Management Authority Green Building Program](#)

[City of Berkeley, Green Building Initiative](#)

[County of Marin, Countywide Plan \(adopted November 6, 2007\)](#)

[City of Oakland Environmental Service Division, Green Building Resource Center](#)

[City of San José, Green Building Policy](#)

[City of San José, Mayor Reed's Green Vision for San José](#)

[City of San Francisco Green Building Program](#)

[San Mateo County, RecycleWorks Green Building](#)

[City of Santa Monica, Sustainable City Plan](#)

[City of Santa Monica, Residential Green Building](#)

[Santa Barbara County, Innovative Building Review Committee](#)

[Richmond Equitable Development Initiative and Principles](#)